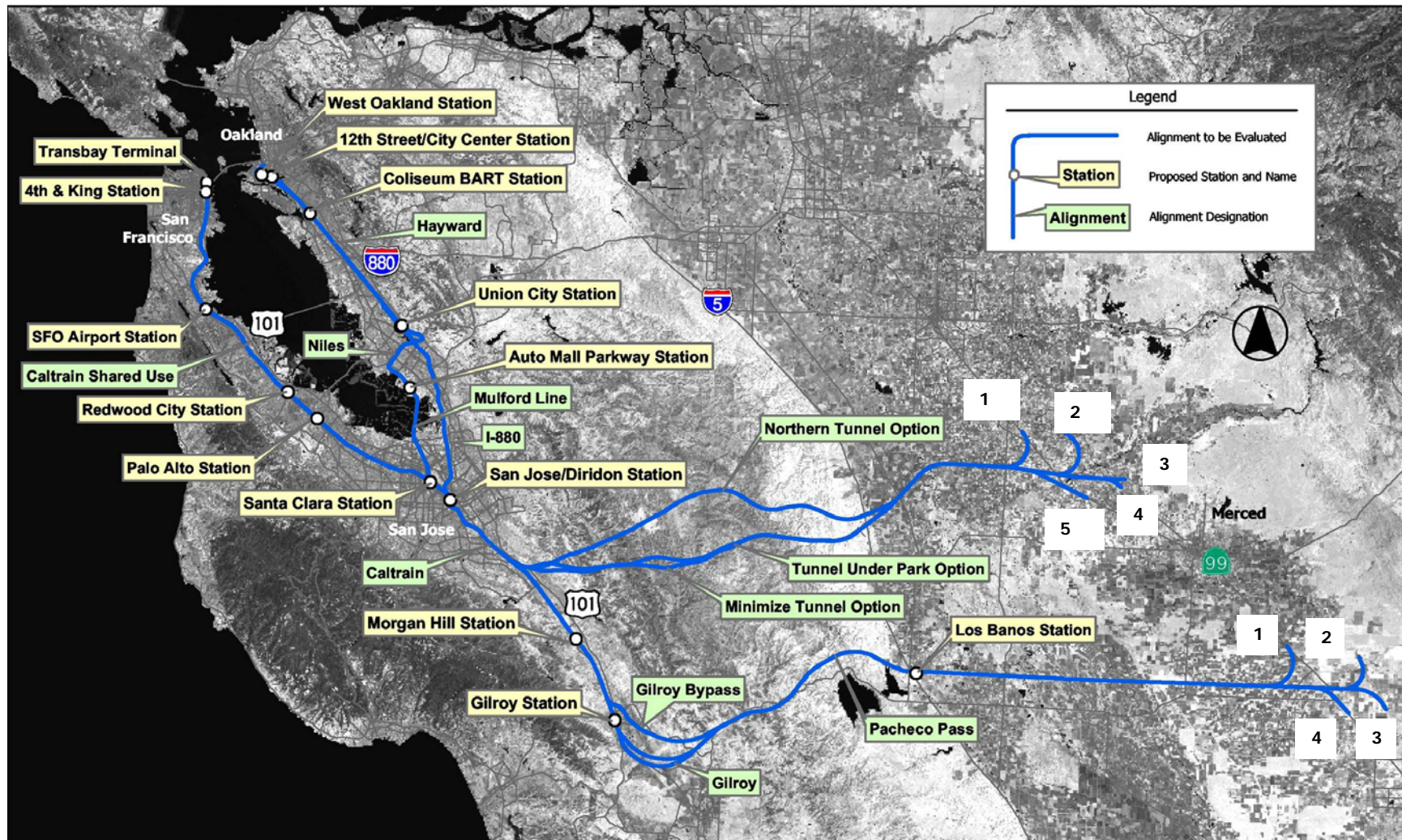


Table 3.3-1 Summary of Potential Impacts and Probable Measures to Minimize Harm to Section 4(f) and 6(f) Recreation Resources for Bay Area To Merced					
	Sections 4 (f) and 6(f) Recreation Resources Within 900 feet	Distance from Centerline in Feet		Potential for (Direct/Construction) Use High, Medium, or Low ⁷	Probable Measures to Minimize Harm
	Columbus Park and Guadalupe Gardens - San Jose	<1	Mile	No potential for use due to distance from centerline.	None
	St. James Park - San Jose	<1	Mile	No potential for use due to distance from centerline.	None
	McEnery Park - San Jose	<0.33	Mile	No potential for use due to distance from centerline.	None
Morgan Hill	Galvan Park - Morgan Hill -	~0.5	Mile	No potential for use due to distance from centerline.	None
	Morgan Hill Community Park -	>0.8	Mile	No potential for use due to distance from centerline.	None
	Diana Park - Morgan Hill -	~0.35	Mile	No potential for use due to distance from centerline.	None
Gilroy	San Ysidro Park – Gilroy -	~0.7	Mile	No potential for use due to distance from centerline.	None
	Forest Street Park - Gilroy Station	~0.3	Mile	No potential for use due to distance from centerline.	None
	Christmas Hill Park - Gilroy -	~0.95	Mile	No potential for use due to distance from centerline.	None
Los Banos	ONeill Forebay <1000' - Los Banos	<0.5	Mile	No potential for use due to distance from centerline.	None
	Volta Wildlife Area (near Henry Miller Avenue) - Los Banos Station -	>2	Mile	No potential for use due to distance from centerline.	None

Figure 3.3-1

HST Alignment Segments and Options and Ends of Alignments (for Northern Alignment and Pacheco Pass Options)



3.4 NATIONAL REGISTER OF HISTORIC PLACES (NRHP) LISTED AND ELIGIBLE AREAS

This section is based on the 'Cultural Resources Technical Evaluation Report' (JRP Historical), which is hereby included by reference. At this Tier 1 programmatic level of analysis, individual historic architectural resources were not enumerated or evaluated for eligibility. Instead, the percentage, based on miles, of each alternative route that passed through areas that originally developed in specific, pre-defined historical time periods (before 1900, 1900 to 1929, and 1930 to 1958) was determined from historical maps, state and local historic resource inventories, and knowledge of the history of the region. The percentages of historic development were used as indicators of historic period resources that would require survey under the next phase of work for this project, should a specific alternative be selected for construction. The percentages of historic development were also used as indicators of the potential for a particular alternative to impact or affect potentially eligible resources that date to 1958 or before.

The rankings developed were translated into qualitative rankings of Low, Medium, and High, as follows:

- Those segments that showed less than 10% developed during the historic period (1958 or before) resulted in a "Low" sensitivity ranking before consideration of the number of known historic resources for each segment.
- Those segments that showed more than 10% developed during the historic period (1958 or before) resulted in a "medium" sensitivity ranking before consideration of the number of known historic resources for each segment. [Please note: nearly all the alternative segments had percentages well below 10% or well above 30%, even when considered by a single period – such as the HST Oakland to San Jose/I-880 option, which measured over 30% historic development for all three historic periods, and the Modal San Jose to Merced (US101-SR152) segment, which is under 10% for all three periods.]
- Once the sensitivity rankings had been assigned to the percentage of historic development, these rankings were compared to the number of known resources within the area of potential effect (APE) for each alternative, as well as the preparer's knowledge and familiarity with the nature of historic architectural resources in that area. A segment that was ranked as "Low" after calculation of its percentage of historic development, such as the HST Caltrain/Gilroy/Pacheco Pass option, could be upgraded to "High" because its APE includes many known historic resources where it passes through the center of several towns and small cities in the Santa Clara Valley.

In this last step for assigning sensitivity ranking, the preparer's knowledge of regional history was used to supplement the data from historic mapping and state and local government inventories.

Based on the research performed for the Cultural Resources task, it does not appear that there are archaeological resources along the HST or Modal Alternative alignments that would qualify for protection under Section 4(f). The most sensitive kinds of resources anticipated consist of prehistoric burials and these could be recovered and relocated if it were demonstrated that there are no prudent and feasible alternatives for avoiding them



Table 3.4-1 Potential for Use and Constructive Use Impacts on Cultural Resources, Including National Register Listed and Eligible Resources, Along the Alignments and in the Vicinity of Project Features for Bay Area To Merced				
	Percentage of Route Developed During Historic Periods	Estimate of Known Historical Resources in APE*	Historic Districts or Specific High Sensitivity Resources	Overall Ranking (High, Medium, Low)**
NO-PROJECT Estimated as equivalent to Modal Alternative for historic architectural resources	See corridors listed under "Modal" alternative, below.			Medium
MODAL				
Modal - San Francisco/Oakland to San Jose (approx. Diridon Station) Modal Corridor San Francisco/Oakland to San Jose includes: <ul style="list-style-type: none"> • US-101 segments (SF to SFO, SFO to Redwood City, Redwood City to I-880) • I-80 segments (SF to I-880, I-880 to I-5) • I-880 segments (I-80 to I-238, I-238 to Fremont/Newark, Fremont/Newark to U.S. 101, U.S. 101 to San Jose [approximately Stockton Crossing]), • I-580 segments (I-880 to I-5 via I-238) 	To 1899: 12.43% 1900-29: 29.06% 1930-58: 70.04%	To 1899: 1 1900-29: 2 1930-58: 2	US Naval Air Station Sunnyvale Historic District (Moffett Field)	Medium
	To 1899: 4.70% 1900-29: 13.46% 1930-58: 20.69%	To 1899: 0 1900-29: 2 1930-58: 4		
	To 1899: 15.80% 1900-29: 20.07% 1930-58: 49.03%	To 1899: 2 1900-29: 2 1930-58: 3		
	To 1899: 2.07% 1900-29: 4.32% 1930-58: 9.96%	To 1899: 1 1900-29: 2 1930-58: 3		
Modal Corridor Bridges: San Francisco/Oakland to San Jose segment includes bridge structures (e.g. overpasses, interchanges, etc.) that date to the historic period. These 271 structures date to between 1900 and 1958.	n/a	To 1899: 0 1900-29: 4 1930-58: 267	Carquinez Bridge and Oakland-SF Bay Bridge listed on NRHP***	
Modal Airports –San Francisco/Oakland to San Jose includes: San Jose, Oakland, San Francisco, and Santa Rosa Airports. Mileage historically developed is based on approximate length of property developed by end of historic period – 1958.	Mileage historically developed (not %) San Jose: .41 mi Oakland: .27 mi San Francisco: .12 mi Santa Rosa: .11 mi	San Jose: 0 Oakland: 0 San Francisco: 6 Santa Rosa: 0		
Modal - San Jose to Merced				Low
Modal Corridor San Jose to Merced includes US-101 segments (San Jose to Gilroy, Gilroy to S.R. 152) and SR-152 segments (US 101 to I-5, I-5 to S-99)	To 1899: 3.96% 1900-29: 3.12% 1930-58: 9.41%	To 1899: 5 1900-29: 5 1930-58: 11		
Modal Corridor Bridges: San Jose to Merced segment includes bridge structures (e.g. overpasses, interchanges, etc.) that date to the historic period. These 26 structures date to between 1900 and 1958.	n/a	To 1899: 0 1900-29: 4 1930-58: 22	No NRHP or CRHR listed bridges in this segment	
Modal Airports = None				

Table 3.4-1 Potential for Use and Constructive Use Impacts on Cultural Resources, Including National Register Listed and Eligible Resources, Along the Alignments and in the Vicinity of Project Features for Bay Area To Merced				
	Percentage of Route Developed During Historic Periods	Estimate of Known Historical Resources in APE*	Historic Districts or Specific High Sensitivity Resources	Overall Ranking (High, Medium, Low)**
HST CORRIDOR & STATION OPTIONS				
San Francisco/Oakland to San Jose (to existing Diridon [Cahill] Station#) Historic districts and specific high sensitivity resources, SF and Oakland to San Jose:	SF to SJ To 1899: 35.53% 1900-29: 46.34% 1930-58: 99.55%	To 1899: 10 1900-29: 125 1930-58: 150	See below	High
Many NRHP/CRHR eligible resources in historic downtown areas between and including San Francisco and San Jose. Former Southern Pacific Railroad stations on San Francisco peninsula (including Cahill [Diridon] Station Historic District# and Santa Clara Station Historic District); Redwood City Historic District. Four tunnels on Caltrain alignment appear to be eligible for the NRHP.				
Sub-options include Oakland to San Jose via I-880 route and Oakland to San Jose via Mulford route	Oak to SJ I-880 To 1899: 32.09% 1900-29: 37.66% 1930-58: 38.20% Oak to SJ Mulford To 1899: 34.52% 1900-29: 40.70% 1930-58: 43.73%	Oak to SJ I-880 To 1899: 20 1900-29: 98 1930-58: 112 Oak to SJ Mulford To 1899: 30 1900-29: 102 1930-58: 117	Downtown Oakland Historic District; Oakland Waterfront Warehouse District; Cahill [Diridon] Station Historic District. Mulford route -- Alviso Historic District and Agnews Insane Asylum Historic District. #	High
San Jose to Merced: Diablo Range Direct Rt. 130 Alignment	To 1899: 2.83% 1900-29: 3.17% 1930-58: 3.01%	To 1899: 1 1900-29: 4 1930-58: 5	Cahill (Diridon) Station Historic District	Low
San Jose to Merced: Diablo Range Direct Minimum Tunnel Alignment	To 1899: 2.65% 1900-29: 3.14% 1930-58: 2.99%	To 1899: 1 1900-29: 4 1930-58: 7	Cahill (Diridon) Station Historic District	Low
San Jose to Merced: Diablo Range Direct Increased Tunnel Alignment	To 1899: 2.69% 1900-29: 3.22% 1930-58: 3.07%	To 1899: 1 1900-29: 4 1930-58: 7	Cahill (Diridon) Station Historic District	Low
San Jose to Merced: Caltrain/Morgan Hill/Pacheco Pass	To 1899: 3.14% 1900-29: 4.34% 1930-58: 5.70%	To 1899: 8 1900-29: 49 1930-58: 51	Historic resources in small towns of Santa Clara Valley, including Morgan Hill. #	High
San Jose to Merced: Caltrain/Gilroy/Pacheco Pass	To 1899: 4.07% 1900-29: 4.75% 1930-58: 6.38%	To 1899: 42 1900-29: 151 1930-58: 161	Historic resources in small towns of Santa Clara Valley, including Morgan Hill & Gilroy. #	High

Table 3.4-1 Potential for Use and Constructive Use Impacts on Cultural Resources, Including National Register Listed and Eligible Resources, Along the Alignments and in the Vicinity of Project Features for Bay Area To Merced				
	Percentage of Route Developed During Historic Periods	Estimate of Known Historical Resources in APE*	Historic Districts or Specific High Sensitivity Resources	Overall Ranking (High, Medium, Low)**
<p>* The total number of historic resources that would require identification, evaluation, and effects analysis would depend greatly upon the final APE approved for the selected route. Once approved, the APE for historic architectural resources can reasonably be expected to be set to between 100 feet and 500 feet from centerline. This estimate assumes the possibility of the widest APE, or 500 feet from centerline for each alternative.</p> <p>** The overall ranking was derived from the relative percentage of historic development for each alternative segment and consideration of the number of known historical resources, as well as the preparer's knowledge of the area. The ranking methodology is described in further detail in Section 3.4.</p> <p>***The Carquinez Bridge and Oakland-San Francisco Bay Bridge are both listed on the National Register and both structures were undergoing replacement or seismic retrofit projects at the time of this Tier 1 analysis (February 2003).</p> <p># The Cahill (Diridon) Station Historic District is located with the APE for all HST alternative options.</p> <p>SOURCE: 'Cultural resources Technical Evaluation Report,' JRP Historical, 2003.</p>				

3.5 LIKELIHOOD OF ADDITIONAL RESOURCES BEING IDENTIFIED AT PROJECT LEVEL (DATA/INFORMATION GAPS)

There is some potential that other publicly owned recreation resources exist within 0.25 mile of the centerlines or project features that were not identified in this current study effort. These resources could include:

- small neighborhood and pocket parks that are not documented in the general maps
- publicly owned open space areas such as within planned communities that are intended to serve recreation and/or resource protection purposes, not documented in general maps.
- public trails that are not shown on general maps
- public golf courses that were not identified in this current study effort
- playing fields belonging to public schools, colleges or universities that which are open for public use
- publicly owned recreation lands and/or wildlife and waterfowl refuges in the study area that may not have been identified in maps

Therefore, it is recommended that the list of existing publicly owned recreation resources be updated during the project level planning and environmental phase, based on additional research with more detailed mapping and consultations with the jurisdictions through which the project alignments pass or in which project components are located.

3.6 AVOIDANCE ALTERNATIVES OR REASONS FOR NO PRUDENT OR FEASIBLE ALTERNATIVE FOR 4(F) OR 6(F) USE

Modal Alternative: Major 4(f) resources that would be in close proximity to the Bay-Area-to-Merced Corridor Modal Alternative alignments include the following:

- Don Edwards San Francisco Bay National Wildlife Refuge
- Coyote Point County Rec. Area
- Martin Luther King Jr. Regional Shoreline

- Ardenwood Regional Preserve
- San Luis Reservoir State Recreation Area
- Point Isabel Regional Shoreline
- Lagoon valley Regional Park
- O'Neill Forebay and Wildlife Area
- Fremont Central Park, and
- Quarry Lakes Land Bank.

It is anticipated that Caltrans would explore alignment variations (e.g., widening to one side or the other), to avoid use of all 4(f) or 6(f) properties where feasible.

Local parks in close proximity to the modal alternative alignments for which there appear to be no alignment variations to avoid 4(f) use are the following:

- Victoria Park – Burlingame
- Flood Park – Menlo Park
- John Lucas Greer Park – Palo Alto
- Baylands Nature Preserve – Palo Alto
- Sunnyvale Municipal Airport – Sunnyvale
- Coyote Creek Park – San Jose
- Eden Greenway Park – Hayward
- Berkeley Aquatic Park - Berkeley

HST Alternative: Major 4(f) resources that would be in close proximity to the Bay-Area-to-Merced Corridor HST Alternative alignments and facilities include the following:

- Pacheco State Park
- San Luis Reservoir State Recreation Area
- O'Neill Forebay and Wildlife Area
- Cottonwood Creek Wildlife Area,
- Fremont Central Park, and
- Quarry Lakes Land Bank.

It appears that use of these facilities can be avoided through alignment variations or by staying within the existing railroad corridor, pending consultation and concurrence by the respective agencies of jurisdiction.

Two resources that would have direct impacts from the HST Alternative alignments and facilities are:

- Don Edwards San Francisco Bay National Wildlife Refuge (Mulford Line Option)
- Henry W. Coe State Park (Minimize Tunnel Option)

The Northern Tunnel and Tunnel Under Park Alignment options of the Northern Alignment would avoid Henry W. Coe State Park. The Pacheco Pass Alignment Option would just avoid the San Luis Reservoir State Recreation Area and Cottonwood Creek and O'Neill Forebay and Wildlife Areas.

Since the Minimize Tunnel Option for the Northern Alignment would directly affect a major 4(f) resource, pursuant to the requirements of Section 4(f), for the selection of this option, it would have to be demonstrated that the added costs of additional tunneling to avoid the park while following the northern alignment would not be prudent and/or that the tunneling would not be feasible. It would also have to be demonstrated that the additional travel time and distance involved to follow either of the Pacheco Pass alignments would also not be prudent.

The Mulford Line Alignment Option for the Oakland to San Jose Segment would directly affect the Don Edwards San Francisco Bay National Wildlife Refuge. The I-880 Alignment Option for the Oakland to San Jose Segment will avoid this resource.

There are numerous local parks for which there appear to be no prudent and feasible alternatives to avoid 4(f) use by the Bay-Area-to-Merced Corridor HST Alternative alignments and facilities. For most of these, however, the HST Alternative would be in an existing railroad corridor; therefore, the potential for use, which is based on proximity to the rail corridor, is likely more apparent than real. Local parks within very close proximity to the alignment segments include the following:

- Herman Street Park - San Bruno
- Posey Park - San Bruno
- Lions Field Park - San Bruno
- Washington Park - Burlingame
- Bay Meadows Golf Course and Race Track - San Mateo
- Laureolia Park - San Carlos
- El Camino Park - Palo Alto
- Cogswell Park - Palo Alto
- Bowden Park - Palo Alto
- Rengstorff Park - Mountain View
- Bracher Park - Santa Clara
- Marsalli Park - Santa Clara
- Fuller Park - San Jose
- Edenvale Garden Park (Canyon Trail Way)
- Coyote Parkway Lake
- Santa Clara Golf and Tennis Club
- California Nursery Historical Park (Mulford/Niles)
- Shinn Historical Park (Mulford/Niles)
- Newark Sportsfield Park
- Thrasher Park - San Leandro
- Centennial Park - Hayward
- Eden Greenway - Hayward
- C.F. Kennedy Park and Community Center - Union City
- Grimmer Park - Fremont
- Columbus Park and Guadalupe Gardens - San Jose

Avoidance alternatives would be explored during project-specific design and environmental evaluation. Either staying within the existing railroad right-of-way or moving horizontally within the right-of-way, where feasible, would likely avoid 4(f) effects.

3.7 OUTLINE OF FUTURE PROJECT-LEVEL SECTION 4(F) AND 6 (F) EVALUATION

The focus of the Section 4(f) and 6(f) analysis at the program level has been to identify resources and estimate the potential for impact based upon their distance from the alternative alignments and other facilities under evaluation. This evaluation helps to discriminate among alternatives and ensures that an alternative that avoids 4(f) or 6(f) protected resources is not withdrawn without consideration of its 4(f)/6(f) implications. It is anticipated that the analysis will become more focused at the project-specific level, once a single alignment alternative or one alternative with limited variations, is identified in each corridor.

Objectives for the project-specific ("Tier 2") analysis would be to identify and enumerate more clearly those 4(f) and 6(f) resources that would be affected by the alternative, to develop prudent and feasible



avoidance alternatives or understand more definitely why apparent avoidance alternatives are not prudent and feasible, and to develop appropriate measures to minimize harm to the 4(f) and 6(f) resources.

The more focused evaluations at the project-specific level would include the following:

- A description of the proposed action in its entirety (plans and profiles);
- A description of the 4(f)-protected resources that would be used, including information regarding their size, uses, annual patronage, unique qualities, and relationship to other lands in the project vicinity¹⁰; and an explanation of the significance of the properties as determined by the Federal, State, or local officials having jurisdiction thereof;
- A detailed description of the 4(f) use that the federal action proposes to have on the protected properties (temporary or permanent use) and the process followed to identify those uses;
- A description - including location, routing or design - of every prudent and feasible alternative (to the one proposed), including the alternative of "no action". Each description should analyze, as appropriate, the technical feasibility, cost estimates (with figures showing percentage differences in-total project costs), the possibility of community or ecosystem disruption, and other significant environmental impacts of each alternative, to show that the financial, social, or ecological costs or adverse environmental impacts of each alternative other than that proposed, would present unique problems or reach extraordinary magnitudes;
- An appropriate number of maps to demonstrate the spatial relationship of the proposed alternative to the 4(f) resources.
- A description of all planning efforts undertaken to minimize harm to the 4(f)-protected resources from the proposed action. This should include a description of actions which will be taken to mitigate adverse environmental impacts, such as beautification measures, replacement of land or structures or their equivalents on or near their existing site(s), tunneling, cut and cover, cut and fill, treatment of embankments, planting, screening, installation of noise barriers, or establishment of pedestrian or bicycle paths;
- Evidence of concurrence or of efforts to obtain concurrence of the public official or officials having jurisdiction over the 4(f)-protected resources regarding the proposed action and the planning to minimize its harm.

If the alignments and station footprints change during EIR/EIS development, then the Authority will have to re-evaluate 4(f) resources to ensure that the changes would not result in additional 4(f) uses.

3.8 SECTION 4(F) AND 6(F) CONSULTATION AND COORDINATION

Initial consultation has been conducted with public agencies at interagency meetings and meetings with Natural Conservancy, Coastal Conservancy etc., to identify possible 4(f) and 6(f) resources. These meetings were appropriate for Tier 1 analysis, however, the subsequent Tier 2 analysis will include more formal 4(f) and 6(f) meetings with Regional, County and local agencies and property owners.

¹⁰ Any resources not listed in the HSRA database must be entered into the database and each listing must include name, address, city, owner, and type of facility.

4.0 REFERENCES

Parsons Brinckerhoff. *Screening Report*. Prepared for California High-Speed Rail Authority, April 2002.

Parsons Brinckerhoff. *Plans and Profiles*. Prepared for California High-Speed Rail Authority, November 2002.

Parsons Brinckerhoff. *Final Draft Environmental Analysis Methodologies*. Prepared for California High-Speed Rail Authority, November 7, 2002.

JRP Historical Consulting Services. *Bay Area –Merced Region – Cultural Resources Technical Evaluation Report*, February 2003

County Plans and General Plans for Cities

AAA maps

The Thomas Guide (Thomas Brothers Maps) – San Francisco, Alameda, Contra Costa and Santa Clara Counties.



5.0 PREPARERS

Pat M. Gelb, Planning Manager. M.A., Literature. Ms. Gelb has over 30 years experience in transportation planning and preparation and processing of environmental documents, 4(f) evaluations, and permitting for FTA, FHWA, Caltrans, and other state and local agencies. She is responsible for 4(f) evaluations, document oversight and review.

Indu Sreedevi, Transportation Planner. M.S. Transportation Engineering. Ms. Sreedevi has over two years experience in transportation engineering and planning. She analyzed the potential for impacts to 4(f) and 6(f) protected properties and prepared this technical report.

Craig Richey, Assistant Planner. B.A., Literature. Mr. Richey has one year of experience in environmental and transportation planning. He provided input for the Modal Alternative highway segments and evaluated STIP projects for 4(f) impacts.

Erdal Karataylioglu, Associate Civil Engineer. Mr. Karataylioglu has two years experience in rail and highway engineering. He was responsible for developing modal and HST alignment mapping and GIS information.

Elia Rouzier, Supervisor of Word Processing. Mrs. Rouzier has over 15 years experience in producing complex environmental documentation. She assisted with the document preparation and production.

